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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,675	04/14/2004	Toru Nakao	Q80547	4891

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EXAMINER	
RODRIGUEZ, GLENDA P	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/823,675	NAKAO ET AL.	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. [illegible]
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, and 22, 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Bui et al. (US Patent No. 6, 791, 781).

Regarding Claim 1, a magnetic tape comprising:

A plurality of servo bands on which are written servo signals for tracking control of a magnetic head (See Fig. 3 and Col. 8, L. 3-10),

Wherein data is embedded in a servo signal written on one of the servo bands, and the data is for specifying the servo band where the servo signal positions (Col. 7, 55 to Col. 8, L. 38).

Regarding Claims 2, Bui teaches all the limitations of Claims 1, respectively. Bui et al. further teaches wherein the servo signal consists of a plurality of continuous patterns sets each of which pattern is nonparallel stripes, and the data is embedded in the servo signal by shifting a pair of nonparallel stripes along the longitudinal direction of the magnetic tape (See Figs. 3 and 4, wherein Bui et al. illustrates the position of the servo bursts in the servo band.).

Regarding Claim 3 and 4, Bui teaches all the limitations of Claim 1. Bui et al. further teaches wherein the servo signal consists of a plurality of continuous patterns sets each of which pattern is nonparallel stripes, and the data is embedded in the servo signal by changing a spacing interval between adjacent continuous patterns sets (See Fig. 5, wherein the spacing interval is different between the sets of servo bursts.).

Regarding Claim 22, Bui et al. teach all the limitations of Claim 1. Bui et al. further teaches wherein specifying the servo band is for accurate tracing of a magnetic head position, and is carried out on a single servo band (Col. 1, L. 41-48).

Regarding Claim 25, Bui et al. teach all the limitations of Claim 1. Bui et al. further teach wherein a plurality of servo bands are arranged along the width of the magnetic tape and a position of one servo band along the width of the magnetic tape can be specified from the data written on the servo band (Col. 7, 55 to Col. 8, L. 38, wherein Bui et al. teaches that servo bands provide positional data).

3. Claims 6-9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Albrecht et al. (US Patent No. 5, 689, 384).

Regarding Claims 6 and 12, Albrecht et al. teaches a method of specifying a servo band from a plurality of servo bands formed on a magnetic tape, comprising the steps of: reading data that is embedded in a servo signal written on one of the servo bands for specifying the servo band where the servo signal positions (See Fig. 2); and specifying the servo band where the servo signal positions based on the data (See Fig. 2 and Col. 5, L. 41 to Col. 6, L. 18).

Regarding Claim 7, Albrecht et al. teaches all the limitations of Claim 6. Albrecht et al. further teaches wherein the servo signal consists of a plurality of continuous patterns sets each of

which pattern is nonparallel stripes, and the data is embedded in the servo signal by shifting a pair of nonparallel stripes along the longitudinal direction of the magnetic tape (See Fig. 4, wherein it teaches the servo stripes used in the servo band or track.).

Regarding Claim 8 and 9, Albrecht et al. teaches all the limitations of Claim 6. Albrecht et al. further teaches wherein the servo signal consists of a plurality of continuous patterns sets each of which pattern is nonparallel stripes, and the data is embedded in the servo signal by changing a spacing interval between adjacent continuous patterns sets (See Fig. 4 and its Description).

Regarding Claims 11 and 13, Albrecht et al. teach all the limitations of Claims 6 and 12, respectively. Albrecht et al. further teaches specifying the servo band by reading one servo band by providing the specific positional information in the servo band as disclosed in Col. 5, L. 41 to Col. L. 18.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bui et al. in view of Fasen et al. (US Patent No. 6, 031, 673). Bui et al. teaches all the limitations of Claims 1 to 3, respectively. Bui et al. further teaches a magnetic tape (Element 220) and a controller (Element 810). However, Bui et al. does not explicitly teach wherein the use of a pulse generation circuit and a servo write head. Fasen et al. teaches a servo write head in Fig. 4

wherein it utilizes pulses in order to record and register defect in the recorded servo signals (Col. 2, L. 57 to Col. 3, L. 22). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Bui et al.'s invention with the teaching of Fasen et al. in order to format a linear storage tape as specified in the Abstract of Fasen et al.

6. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bui et al. in view of Murphy et al. (US Patent No. 6, 433, 949). Bui teaches all the limitations of Claims 1-3, respectively. However, Bui et al. does not explicitly teach wherein the steps of encoding data, converting into a pulse current and writing the data with the given pulse current. Murphy et al. teaches the encoding of the servo bands (Col. 4, L. 21-29 of Murphy et al.) and a pulse width bias with which the servo data is recorded (Col. 4, L. 30-54 of Murphy et al.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Bui et al.'s invention with the teaching of Murphy et al. in order to write servo bands (See Abstract Murphy et al.).

7. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bui et al. in view of Cates et al. (US Patent No. 5, 963, 400). Bui et al. teaches all the limitations of Claim 1. However, Bui et al. does not explicitly teach wherein the servo bands are previously DC erased. Cates et al. further teach wherein the bands have been DC erased as shown in Col. 3, L. 51-67. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Bui et al.'s invention with the teaching of Cates et al. in order to allow multiple patterns to be recorded in the servo band as disclosed by the Abstract of Cates et al.

8. Claims 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht et al. in view of Cates et al. (US Patent No. 5, 963, 400). Albrecht et al. teaches all the limitations of Claim 6. However, Albrecht et al. does not explicitly teach wherein the servo bands are previously DC erased. Cates et al. further teach wherein the bands have been DC erased as shown in Col. 3, L. 51-67. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Bui et al.'s invention with the teaching of Cates et al. in order to allow multiple patterns to be recorded in the servo band as disclosed by the Abstract of Cates et al.

9. Claims 20, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bui et al. in view of Hennecken et al. (US Patent No. 6, 710, 967).

Regarding Claim 20, 27 and 28, Bui et al. teach all the limitations of Claims 1 and 6, respectively. Bui et al. further teach wherein the servo signal consists of a plurality of continuous patterns sets each of which pattern is nonparallel stripe in Figs. 3 and 4, wherein Bui et al. illustrates the position of the servo bursts in the servo band. However, Bui et al. does not explicitly teach wherein s the data is embedded in the servo signal by varying the thickness of said stripes. Hennecken et al. teaches this limitation in Fig. 2, especially in Elements 62 and 64, which are servo areas with different widths.

10. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht et al. in view of Kosuge (US Patent No. 5, 353, 176).

Regarding Claim 21, Albrecht et al. teach all the limitations of Claim 12. However, Albrecht et al. does not explicitly teach wherein comprising: a reserve servo read head for use if said servo read head malfunctions. This limitation is taught by Kosuge according to its Abstract.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Albrecht et al.'s invention with the teaching of Kosuge in order to reproduce data without an occurrence of an error as taught by Kosuge in Col. 1, L. 67 to Col. 2, L. 4.

Regarding Claim 24, the combination of Albrecht et al. and Kosuge teach all the limitations of Claim 21. The combination further teaches wherein the servo read head and the reserve servo read head are provided in one head unit as disclosed in Fig. 3 of Albrecht et al.

11. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht et al. and Kosuge as applied to claim 21 above, and further in view of Bui et al. (US Patent No. 6, 940, 682). The combination of Albrecht et al. and Kosuge teach all the limitations of Claim 21. However, the combination does not explicitly teach wherein the servo read head and the reserve servo read head respectively read a different servo band. This limitation is taught by Bui et al. as shown in Fig. 4 and Col. 7, L. 53 to Col. 8, L. 10, wherein it teaches two servo heads in which one reads the positional information according to its close proximity to the servo band. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Bui et al. in order to control the system by sensing the position of the servo data as taught in the Abstract.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bui et al. in view of Fasen (US Patent No. 6, 563, 659). Bui et al. teach all the limitations of Claim 25. However, Bui et al. does not explicitly teach wherein different data is written on each of the plurality of servo bands. This limitation is taught by Fasen, wherein it teaches two servo elements in one same head wherein they measure according to their values a difference in tension in the tape medium in Col. 2, L. 18-31. It would have been obvious to a person of ordinary skill in the art,

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Albrecht et al.'s invention with the teaching of Kosuge in order to reproduce data without an occurrence of an error as taught by Kosuge in Col. 1, L. 67 to Col. 2, L. 4.

Regarding Claim 24, the combination of Albrecht et al. and Kosuge teach all the limitations of Claim 21. The combination further teaches wherein the servo read head and the reserve servo read head are provided in one head unit as disclosed in Fig. 3 of Albrecht et al.

11. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albrecht et al. and Kosuge as applied to claim 21 above, and further in view of Bui et al. (US Patent No. 6, 940, 682). The combination of Albrecht et al. and Kosuge teach all the limitations of Claim 21. However, the combination does not explicitly teach wherein the servo read head and the reserve servo read head respectively read a different servo band. This limitation is taught by Bui et al. as shown in Fig. 4 and Col. 7, L. 53 to Col. 8, L. 10, wherein it teaches two servo heads in which one reads the positional information according to its close proximity to the servo band. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Bui et al. in order to control the system by sensing the position of the servo data as taught in the Abstract.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bui et al. in view of Fasen (US Patent No. 6, 563, 659). Bui et al. teach all the limitations of Claim 25. However, Bui et al. does not explicitly teach wherein different data is written on each of the plurality of servo bands. This limitation is taught by Fasen, wherein it teaches two servo elements in one same head wherein they measure according to their values a difference in tension in the tape medium in Col. 2, L. 18-31. It would have been obvious to a person of ordinary skill in the art,

at the time the invention was made, to modify Bui et al.'s invention with the teaching of Fasen in order to adjust the tension in the tape medium as disclosed in the Abstract.

Response to Arguments

12. Applicant's arguments filed 5/23/06 have been fully considered but they are not persuasive. Applicant argues that "Bui et al. fails to teach that the data for specifying the servo signal are written on *only* one of the servo bands". However, the claim is not limited to "only one" and as shown in the Background of Bui et al., wherein it teaches that the each of the servo tracks provide timing and positioning information, hence there is servo data in each one of the servo bands containing information or data corresponding to head positioning.

In a telephonic interview on July 27, 2006, Applicant's also argued that Bui et al. used "two servo bands and not one servo band in order to obtain positional information" in Col. 8, L. 21-22. Examiner however understands from this cited column and line that both servo bands do contain servo information and it is more accurate to have the servo information from two servo bands than from one because it may more accurately indicate the position of the head within the tape medium.

Hence, the rejection in view of Bui et al. still stands.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US Patent No. 6, 330, 123 to Schwarz et al.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gpr
07/31/06.

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER